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10/077,060	02/15/2002	Hugo Johan Cornelissen	NL010089	1636

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P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

CARIASO, ALAN B

ART UNIT PAPER NUMBER

2875

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,060

Applicant(s)

CORNELISSEN ET AL.

Examiner

Alan Cariaso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the control electronics for selectively setting the luminous flux of the at least one light emitting diode dependent upon the color temperature of the ambient light (claim 12) and for selectively setting the luminous flux of the at least one light emitting diode and/or the luminous flux of the at least one electric discharge lamp dependent upon the illumination level of an image displayed by the display device (claim 14) must be shown or the feature(s) canceled from the claim(s); and a metal core printed circuit board on which the light emitting diodes are mounted (claim 15). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 8 is objected to because of the following informalities: Claim 8, line 4, the term "coupled" is incorrect in tense or form, and should be written as —couple—to correspond to the intended infinitive form. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 8-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 8, line 10, the phrase "to set the color temperature of the light emitted by the light source independently of the physical structure of the light source" is indefinite as to how this is possible given that the spectral distribution of at least the light emitting diode that defines its color temperature and part of the light source is dependent on the composition of at least the light emitting diode. In addition, "the physical structure" is indefinite as to which part (the discharge lamp or light emitting diode or both?) of the light source is being referred.

6. Claim 9, line 2-4, the limitation "said at least one light emitting diode has a light emission wavelength that is higher than the light emission wavelength of the electric discharge lamp" is indefinite as lacking support from the specification as the preferred embodiment or limitation. Though the specification does state that the LEDs have a light emission wavelength that is higher or lower than that of the discharge lamp (pg.2, lines 16-17), there is no disclosed reason why a higher wavelength is preferred or what problem is being solved with a higher wavelength. Instead, the preferred embodiment on page 3 discloses solving the problem regarding reduction of color temperature of the discharge lamp due to the color filters in the display device (pg.3, lines 10-34 to page 4,

lines 1-3) of which the color temperature is preferably increased by increasing contribution of blue (shorter wavelength) and decreasing the contribution of red (longer wavelength) in the light emitting diodes, i.e. the use of LEDs of blue light emission wavelength is preferred. Furthermore, no particular wavelength of the discharge lamp has been disclosed to be of any value less than the light emitting diodes, especially since it is understood that fluorescent type of discharge lamps have a composite of wavelengths or range of wavelengths in at least the visible spectrum.

7. Claim 14 lines 2-5 recites "control electronics for selectively setting the luminous flux of the at least one light emitting diode and/or the luminous flux of the at least one electric discharge lamp dependent upon the illumination level of an image displayed by the display device". This recitation is indefinite as being misdescriptive with the ambiguous implication made using the conjunction "and/or". According to the specification, page 6, lines 27-32, the control electronics are for suitably adapting the luminous fluxes ... preferably the luminous fluxes through the LEDs 8, 8', ... Therefore the claimed function that the control electronics selectively sets the luminous flux of both the light emitting diode and electric discharge lamp or just the luminous flux of the discharge lamp is not clearly supported by the specification.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 2, 6, 8, 10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by REITHMEIER (US 6,488,385).

10. REITHMEIER discloses an illumination system comprising a light-emitting panel (10) and a light source (2) for coupling light or arranged to couple light from the light source into the light-emitting panel (10), the light source (2,5,15) including at least one electric low-pressure mercury-vapor discharge lamp (fluorescent lamps 2), characterized in that the light source (2,5,15) further comprising at least one light-emitting diode or a plurality of light-emitting diodes (5,15); the light emitting diodes (5,15) comprises a light emission wavelength (visible); further comprising control electronics for changing the luminous flux of the light emitting diodes (col.3, lines 12-15) or for at least selectively setting the luminous flux under control by a user (col.2, lines 33-37); wherein the at least one electric discharge lamp includes first and second electric discharge lamps (2) physically separated from one another (at least by frame parts 7-fig.2).

11. As for the phrases in claims 1, 2, 8 & 12, "for selectively setting the color temperature of the light emitted by the light source" (claim 1), "for selectively increasing the color temperature of the light emitted by the light source" (claim 2), "so as to set the color temperature of the light emitted by the light source independently of the physical

structure of the light source" (claim 8) and "for selectively setting the luminous flux of the at least one light emitting diode dependent upon the color temperature of ambient light or under control by a user" (claim 12), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

12. Claims 1, 2, 6-8, 10, 12 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by HARTER, JR (US 6,447,132).

13. HARTER discloses a liquid crystal display device (26) optically coupled to an illumination system (fig.2) for illuminating the display device (26) comprising: a light-emitting panel (23), a light source (22A,22B,21) arranged to couple light (22C,21A) from the light source into the light-emitting panel (23), wherein the light source (21,22A,22B) comprises; at least one electric discharge lamp (col.2, lines 6-8), and at least one light emitting diode (col.2, lines 19-21) so as to at least set the color temperature of the light emitted by the light source (col.2, lines 57-59); wherein the at least one electric discharge lamp (21) includes at least first and second discharge lamps (col.4, lines 19-22) inherently physically separated from one another; further comprising control electronics (13-fig.5) for selectively setting the luminous flux of the at least one light

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emitting diode (22A,22B) dependent upon the color temperature of ambient light (col.2, lines 43-48; col.3, lines 58-66) or under control by a user (col.2, lines 48-49).

14. As for the phrase "for selectively setting the luminous flux of the at least one light emitting diode or low brightness light source and/or the luminous flux of the at least one electric discharge lamp dependent upon the illumination level of an image displayed by the display device" (claim 14), a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

15. Claims 1, 8 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by German Patent (DC 20007134).

16. German Patent '134 discloses an illumination system comprising a light-emitting panel (8) and a light source (6,10) for coupling light or arranged to couple light from the light source into the light-emitting panel (8), the light source (6,10) including only one electric low-pressure mercury-vapor discharge lamp (6, figs.1-3), characterized in that the light source (6,10) further comprising at least one light-emitting diode (10) or a plurality of light-emitting diodes (10,figs.1-3) for selectively setting the color temperature (see abstract) of the light emitted by the light source.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 3, 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over REITHMEIER (US 6,488,385) in view of TURNBULL et al (US 5,803,579).

19. REITHMEIER discloses applicant's claimed invention except the color temperature of the light emitted by the light source that can be set to range from 6,000 K to 11,000 K and the light emitting diodes comprising a blue light emission wavelength.

20. TURNBULL teaches light sources emitting light set in the range of 2,000 K to 10,000 K by fluorescent type light sources (col.15, lines 54,57) and light emitting diode type light sources (col.22, lines 25-28) for the purpose of producing hue variations of white light applicable to at least backlight displays (col.9, line 63 to col.10, line 12) to enhance apparent color and contrast (col.7, lines 19-24) of the object/display being illuminated. TURNBULL further teaches blue-green LEDs (col.22, lines 4-15) for the purpose of mixing light with another wavelength to produce at least white light.

21. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the backlighting device of REITHMEIER with a set color temperature of the light source in the approximate range of at least 6,000 to 10,000 K

and a blue light emission from the LEDs as taught by TURNBULL in order to produce variations of white light in enhancing visibility of the color and contrast of images.

22. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over REITHMEIER (US 6,488,385) in view of MASS et al (US 6,539,656).

23. REITHMEIER discloses applicant's claimed invention except: the light emitting diodes each producing a luminous flux of at least 5 lm; a metal core printed circuit board. MASS teaches the use of light emitting diodes emitting light each of which produce an luminous flux of at least 5 lm (col.6, lines 27-42) for the purpose of illuminating a display with high attraction value. MASS also teaches a metal-core printed circuit board (col.6, lines 48-64) for the purpose of dissipating heat generated by the LEDs mounted on the circuit board.

24. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the backlighting device of REITHMEIER with each light emitting diode emitting a luminous flux of at least 5 lm and metal core PCB as taught by MASS et al in order to illuminate a display with high output or high attraction value and to dissipate heat from the light emitting diodes minimizing degradation of the materials and operation of the lighting device.

Response to Arguments

25. Applicant's arguments filed May 12, 2003 have been fully considered but they are not persuasive.

26. In regards to arguments directed to the rejection of claims 1, 2 and 6 as being anticipated by REITHMEIER, applicant states that the Reithmeier patent discloses the combination of two or more abutting fluorescent lamps and a plurality of light-emitting diodes, but the purpose of the light-emitting diodes in Reithmeier is to add additional light so as to compensate for dark ridges that occur at the joints of the two or more abutting fluorescent lamps, that in contrast, the light-emitting diodes of the present invention (claim 1 etc) are for the purpose of selectively adjusting or setting the color temperature of the light emitted by the overall light source comprising the discharge lamp and the plurality of light-emitting diodes, and the applicant further states that this novel concept is not taught by the Reithmeier patent and does not anticipated the invention as claimed in claim, despite some overall similarity in the physical structure thereof. In response, applicant is erroneous to rely that the purpose(s) of the claimed invention should also be anticipated or taught by the prior art to REITHMEIER, the purpose being "for selectively setting the color temperature of the light emitted by the light source" and "for selectively increasing the color temperature of the light emitted by the light source". These phrases have been adequately addressed in paragraph 11 of this Office Action. As claimed in claims 1, 2 and 6, all structural limitations remain anticipated by REITHMEIER and that the intended use of these claims given the claimed structure are also met by the disclosed structure of at least proximate discharge lamps and LEDs of the REITHMEIER reference of which is capable of having influence of the color temperature of the entire lighting device of REITHMEIER.

27. In regards to arguments directed to the rejection of claims 3 and 4 as being obvious in view of REITHMEIER in view of TURNBULL et al, applicant states that the material in Turnbull has nothing at all to do with the problem solved by the present invention, that there is no indication or suggestion in the Reithmeier patent that any problem exists therein related to the color temperature of the fluorescent lamps, that there is no reason or motivation to employ any blue LEDs of Turnbull in the device of Reithmeier, that the combine teachings of Turnbull with that of Reithmeier is based upon an impermissible hindsight reconstruction of such prior art (and based upon the present disclosure herein). In response, all elements of the combination of REITHMEIER with TURNBULL which are alleged by the applicant be lacking is adequately provided. TURNBULL may or may not solve the problem in the present invention, but clearly recites its teachings of preferable color temperature ranges and hues for fluorescent and LED lights that would enhance illuminated visibility of at least displays (columns 1-7 and column and the line numbers provided in paragraph 20 of this Office Action), which discards the notion of any improper hindsight. The problem of providing the color temperatures and hues of an illumination source directed toward a display is addressed and taught by TURNBULL, and that such considerations would be obvious one of ordinary skill in the art given the lighting device of discharge lamps and LEDs to illuminate a display provided by REITHMEIER, with at least a motivation provided by TURNBULL to produce variations of white light in enhancing visibility of the color and contrast of images (col.1-7). Furthermore, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon

hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

28. Applicant's argument regarding the rejection of claim 5 over REITHMEIER in view of MASS et al, alleges that the MASS et al patent does not cure the above described deficiencies in the Reithmeier patent, and that any combination would still not result in the illumination system claimed in claim 5. In response, the teachings provided by MASS et al which includes LEDs with a luminous flux of at least 5 lm for high attraction value of display, and the statement of obviousness to one of ordinary skill to provide the LEDs of REITHMEIER with the luminous flux of MASS with a motivation provided by MASS are adequate to show obviousness of the claimed invention of claim 5.

29. Newly submitted claims 8-18 have been addressed above by drawing objections, indefiniteness under USC 112 2nd paragraph and rejection of some of these claims by the prior to REITHMEIER, TURNBULL, MASS and by newly cited prior art to HARTER JR and German Patent '134.

Allowable Subject Matter

30. Claims 9, 13, 16 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Derwent abstract document 2000-588568 provides an English abstract of the German Patent 20007134. SIITARY (US 6,213,615) shows a backlit LCD with plural lamps of different color temperatures selectively adjusting the color temperature of the backlight by an electronic controller that includes a light sensor 12 and manual control by the user (col.4). KATADA (US 5,933,089) shows electronic controller that includes sensors for sensing ambient light and backlight intensity to adjust lighting of the light emitting diodes (61a,b) of the backlight of the LCD.

32. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (703) 308-1952. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Alan Cariaso
Primary Examiner
Art Unit 2875

AC
July 28, 2003